Tube of the Month

F-123A

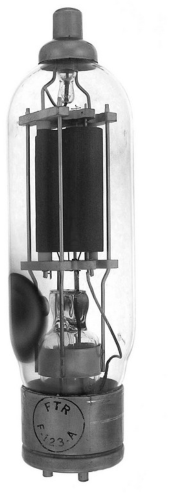
Before the United States entered WWII, the British were losing many merchant ships to the Axis powers. They wanted the U.S. to build replacement ships using a design they had been using. The U.S. agreed to the project, but wanted to alter the design to speed production. British ships were built with rivets. This is a slow process and requires well trained workers. The American shipyards wanted to build all the parts on an assembly line and weld everything together. A worker could be trained to weld in a short time. They also wanted to power with oil and not coal. The final design was called the “Liberty Ship”.

Most of these ships were built in Richmond, California with their power plants constructed in Sunnyvale. With the draft and volunteers removing many of the available construction workers, large numbers of women were hired. “Rosie the Riveter” was replaced by “Wendy the Welder”. ”Wanda the Welder” was busy making aircraft and war ships in the East. It is relatively easy to maintain a good arc weld with a steady hand and lots of current, but attention must be made for foul smells that may indicate that your clothing and/or hair may be on fire.

The contract for the ships was “out the door” so all operational equipment including radios and antennas were required. Federal Telephone and Radio was contracted to provide radio equipment for the early ships. The Federal F-123A was chosen, or may have been developed, especially for this application. I have identified no other use for this tube except for the Liberty ships. This 125-watt triode is slightly longer than the 211 tube at 8.25 inches. Maximum plate voltage is 2000 volts at 300 ma. The filament is 10 volts at 4 amps. The tube’s mu is 14.5 so it could be used as an RF amplifier or as a modulator. The 240-watt CW transmitter that FTR built was the 129A and used one tube as the driver and two in the final amplifier. The tube was capable of full power up to 30 MHz. Marine transmitters operated on CW to pass traffic with coastal stations and other ships. They also had to operate on 500 KHz or 600 meters. This was the emergency frequency and it had to be monitored at all times. The lifeboat radios were also on this frequency and could send CW with a built-in key or use a motor driven SOS (HELP!) or SSS (under submarine attack) wheel as shown in the photo of my Navy TCY-1 lifeboat transmitter.

Mackay Radio & Telegraph (ITT Mackay Marine) provided service for many of the Merchant Marine ships. They contracted spare tubes for the older transmitters and the MR-123-A was produced for them.

Visit the museum at N6JV.com
Norm N6JV (amateur welder)


FTR
F-123-A

SSS
SOS
KEY
KEYING SEL.
START